The Coal Authority

Cyfoeth Naturiol Cymru
Natural Resources Wales

The Metal Mine Programme

February 2024

Background

Abandoned metal mines cause significant pollution in Wales, harming river ecology with metals like cadmium, lead, zinc and copper. There are approximately 1,300 abandoned metal mines across Wales that have been estimated to impact over 700 km of rivers.

Natural Resources Wales (NRW) and the Coal Authority (CA) are working together on the Metal Mine Programme to address this polluting legacy. The Programme is funded by Welsh Government.

The primary aim of the Programme is, where technically and financially feasible, to reduce pollution from abandoned metal mines to improve the health of our rivers, benefiting the environment, people and the economy.

In doing so this will directly contribute to the sustainable management of natural resources in Wales, and enhance community well-being benefits, as detailed in the Environment (Wales) Act 2016 and the Well-being of Future Generations (Wales) Act 2015.

Project Context

The Dylife Mine is a historical lead mine 13 km northwest of Llanidloes. The mine was abandoned in the late 1920s and the underground mine workings and surface deposits of mine waste are a source of metals pollution including lead, cadmium, and zinc.

The Afon Twymyn and one of its tributaries, the Nant Dropyns, flow through the site, receiving metal-rich run-off and discharges which impact on water quality and ecology.

This results in the Afon Twymyn failing to achieve the ‘good status’ required by the Water Framework Directive (WFD) all the way to its confluence with the Afon Dyfi.

Construction of a modern road embankment and associated surface water drainage in the 1970s has increased the impacts arising from the mine and results in flooding of the Afon Twymyn valley during storm events.

The Dylife project aims to address the main pollution sources, improve the drainage and create a stable landform at the site for the long term.

Project Progress

Over the past few years, we have been monitoring the site and gathering information to better understand the sources of pollution and how they impact the rivers that run through the site. This information has been used to develop an Outline Design for a series of works required to achieve the pollution reduction objectives.

In 2020 we completed a Feasibility Study to collate relevant information and establish what could be done to maximise pollution prevention and other environmental benefits, whilst also considering cost and designation constraints such as ecological and heritage protections.

We have also completed archaeological, ecological, landscape and hydrological assessments, topographical surveys, and monitoring of water quality.

Temporary engineering works have recently been completed comprising the installation of rock-rolls (stone filled bags) along the lower section of the Nant Dropyns where it meets the Afon Twymyn. The works have immediately reduced erosion of some very metal rich material, stopping this from moving downstream and polluting the watercourse. The works will also improve surface water drainage.

A combination of options presented below is needed to successfully manage the range of pollution sources at Dylife Mine.

We welcome your input as we progress to Detailed Design, as well as any wider environmental, social and economic opportunities available.

Mitigation Options

- **Watercourse management e.g. separation/ diversion options**
- **River channel lining / sealing**
- **Surface water management/ drainage/ culverting**
- **Spoil heap drainage**
- **Spoil heap erosion protection**

Mining Heritage and Ecology

The Dylife Mine sits within an area of high archaeological and ecological value and sensitivity, relating to the mine and its associated spoil heaps and surrounding landscape.

A number of rare plants grow on the metal-rich spoil heaps, including lichens and bryophytes which form 'Calaminarian Grassland' habitat. The site sits with an area of Open Mosaic Habitat, with the mosaic vegetation types of ecological significance including mine spoil, bare rock and scree (all potentially including Calaminarian grassland), gorse dominated dry-heath, acid grassland, acid flush and open water. Both the Open Mosaic Habitat and the Calaminarian Grassland are designated Habitats of Principle Importance.

The eastern area of the Dylife Mine is designated a Site of Special Scientific Interest (SSSI), cited due to its geological interest associated with the spoil tips.

The site lies within Clywedog Valley Registered Historic Landscape with its value mainly associated with the heritage setting.

It has high archaeological potential relating to historical mining activity, with extensive sensitive remains that require further archaeological assessment.

Next Steps

The Outline Design of intervention measures identified by the Feasibility Study will be progressed to Detailed Design, including consultation with stakeholders. The works are likely to be completed under permitted development consent and with other regulatory consents obtained (e.g., SSSI consent) as required.

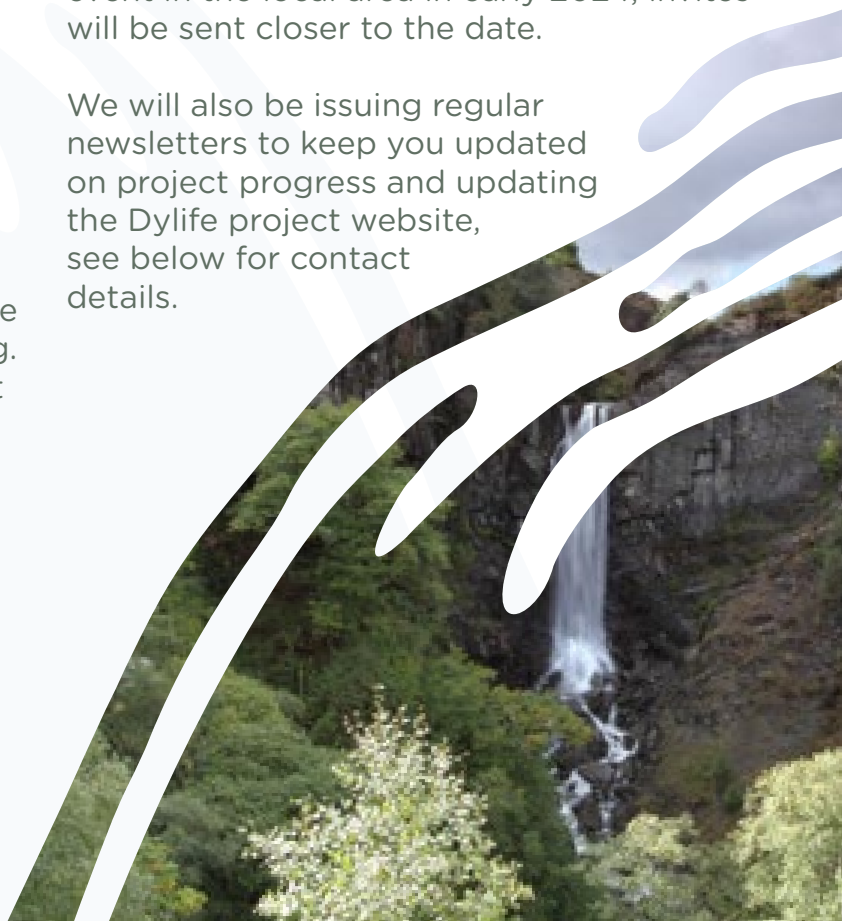
The main elements of the proposed works comprise water course lining, new drainage and culvert and tip reprofiling and capping. The work will be delivered in phases as set out in the timeline on the following page. The timeline is indicative and subject to securing the required funding.

Each phase of works will be followed by monitoring and assessment to evaluate the efficacy of the works and inform any changes to the proposed design of future phases.

We would like the local community and other stakeholders to play a key part in this process.

We will be hosting a public consultation event in the local area in early 2024, invites will be sent closer to the date.

We will also be issuing regular newsletters to keep you updated on project progress and updating the Dylife project website, see below for contact details.



Current Timeline

To date

Investigation and Assessment

Ground investigations.

Baseline ecological and heritage surveys.

Flow and water quality monitoring to inform a Scoping Study, long list of intervention options and preferred option.

2023 to 2024

Development of Detailed Design Phases 1+2

Stakeholder consultation event to inform of outline design proposals.

Continued consultation with statutory consultees. Procurement of contractor and consultant to develop Detailed Design.

Complete final ecological, heritage and landscape assessments.

2025

Construction Phases 1+2

Commence phased construction of interventions.

Watercourse lining, new culvert, road drainage.

Continued monitoring to assess efficacy of interventions.

2025 to 2027

Detailed Design and Construction Phase 3

Watercourse lining and new drainage - Detailed Design and construction.

Continued monitoring and assessment.

2027 to 2028

Detailed Design and Construction Phase 4

Tip reprofiling and capping and new drainage - Detailed Design and construction.

Continued monitoring and assessment.

Keeping in Touch and How to Get Involved

We want to hear from you as we progress the Dylife Mine Project and explore the wider environmental and social opportunities that can be developed as part of the preferred strategy for this site.

Explore more about the Dylife Mine Project as well as the wider metal mines programme by using the following links below:

bit.ly/DylifeMetalMine

bit.ly/MetalMineWaterPollution

If you'd like to share your views, be added to an email mailing list, or have any questions please get in touch on the details below:

0300 065 3000

Dylife@metalmineswales.co.uk

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Old mines are dangerous places with many hidden hazards. Many of our projects are located on private land where public access is not permitted without landowner approval.

STAY MINE SAFE